USASC&FG Information Technology and Digital Training Masterplan

Report Presentation

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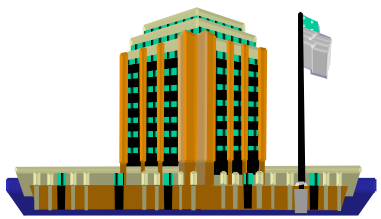
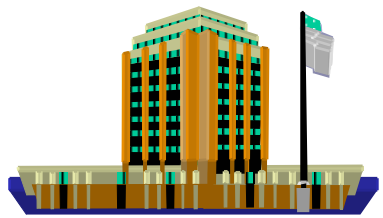




Tasks

- Develop lifelong learning approach to accomplish USASC&FG education and training missions, now and in the future
- Determine Level 1 requirements for implementing this learning approach
- Develop proposed manning skill requirements and strategies
- Develop a ROM cost estimate
- Determine and document linkage to doctrine
- Prepare a level 1 masterplan
- Develop a road map for Implementing the masterplan

Report Outline

- **Executive Summary**
- **Preface**
- **Situation**
- **Mission**
- **Execution**
- **Service Support**
- **Command and Signal**
- **Road Map**

Situation

- Demands on signal and information technology are increasing over an expanded battlespace

- Number of systems and networks are expected to continue increasing with the maturing of "Information Dominance" as a component of warfighting and digital systems are fielded
  - Includes legacy, digital and COTS systems for the foreseeable future

- Signal and Information Technology personnel are becoming recognized as "Key Personnel"

- Complexity of information systems and networks are increasing consistent with trends in technology and software
  - Rapid changes places continuous demands on learning
  - Skills are perishable; must be continuously refreshed

Situation

- Must train the ***science*** of operating and maintaining the systems as well as the ***art*** of employing and fighting the systems and networks

- Cannot expect to meet growing demands for signal and information technology soldiers and leaders by:
  - Increasing the education and training infrastructure of the USASC&FG to a level that meet demands
  - Continuing “business as usual”

- Education, training, and distribution technologies and methodologies are available to assist the USASC&FG fulfill its responsibilities

- Actions taken must be consistent with TRADOC Transformation Strategy and other Army initiatives

Mission

- Provide highly trained soldiers, leaders and organizations to achieve information superiority for the full spectrum force
- Provide and manage a seamless, protected, survivable, integrated and dynamic information service
- Acquire and integrate relevant information technologies and related doctrine into the force

Commander's Guidance

- USASC&FG will fulfill its responsibilities to soldiers, leaders, and units, to include joint and combined training
- Soldiers and leaders will arrive at their units trained
- Train legacy, digital and COTS systems
- Put trained soldiers and leaders in the field faster
  - Do not be tied to current way of doing business; update/change as appropriate to accomplish
- Be consistent with TRADOC Transformation Strategy and other Army and joint initiatives
- Establish partnership with units to put plan into place

Commander's Intent

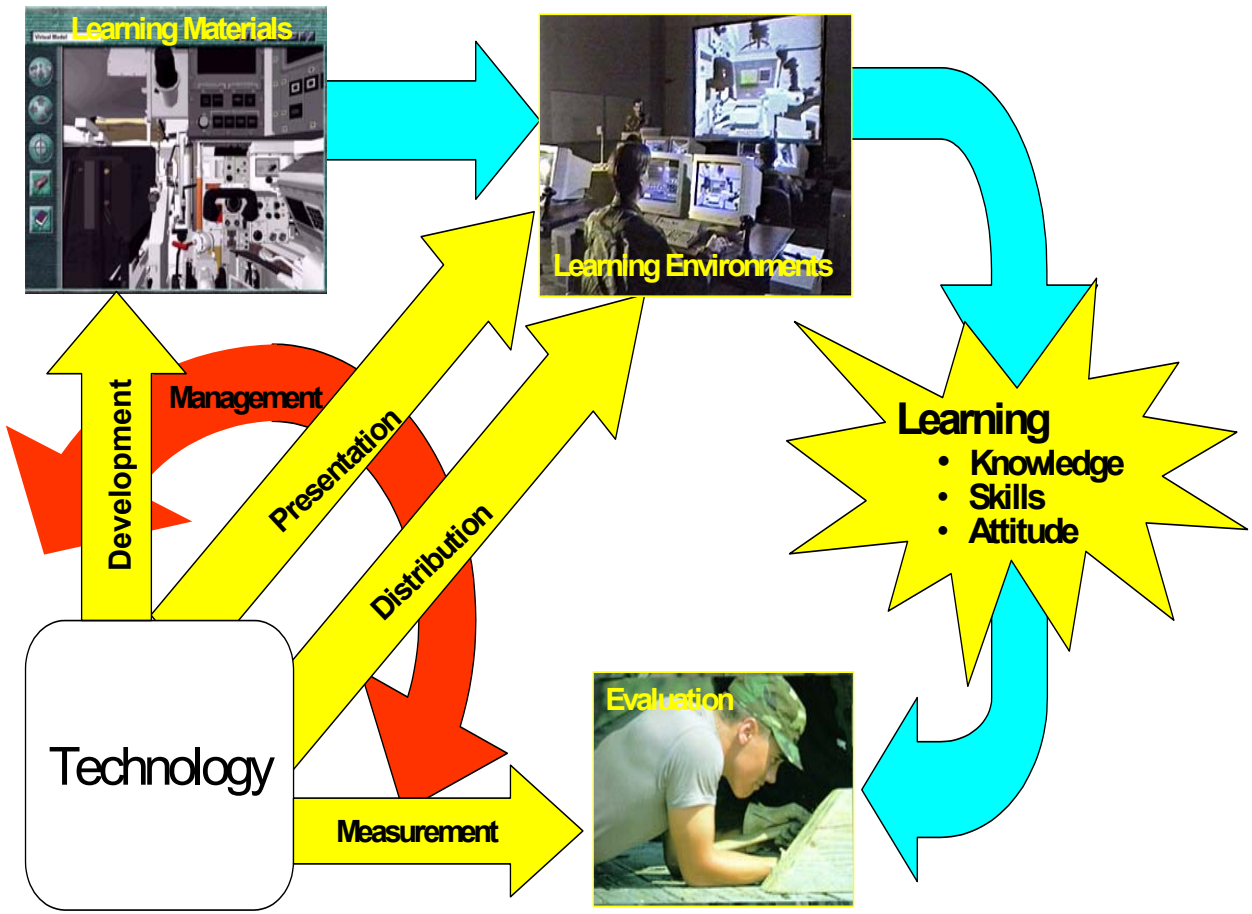
USASC&FG will perform its mission, now and in the future

- Leverage education, training, and distribution technologies and methodologies to:
  - Provide realistic, better learning at less cost
  - Support on-site training and materials on-demand for soldiers, leaders, and units
  - Establish 24/7 reach back to the USASC&FG

- Establish USASC&FG as the "Center of the Universe" for lifelong learning and information for signal and information technology soldiers and leaders, to include alumni

- Organize as a university to provide lifelong 24/7 learning and support for signal and information technology soldiers and leaders

Technology Assisted Lifelong Learning



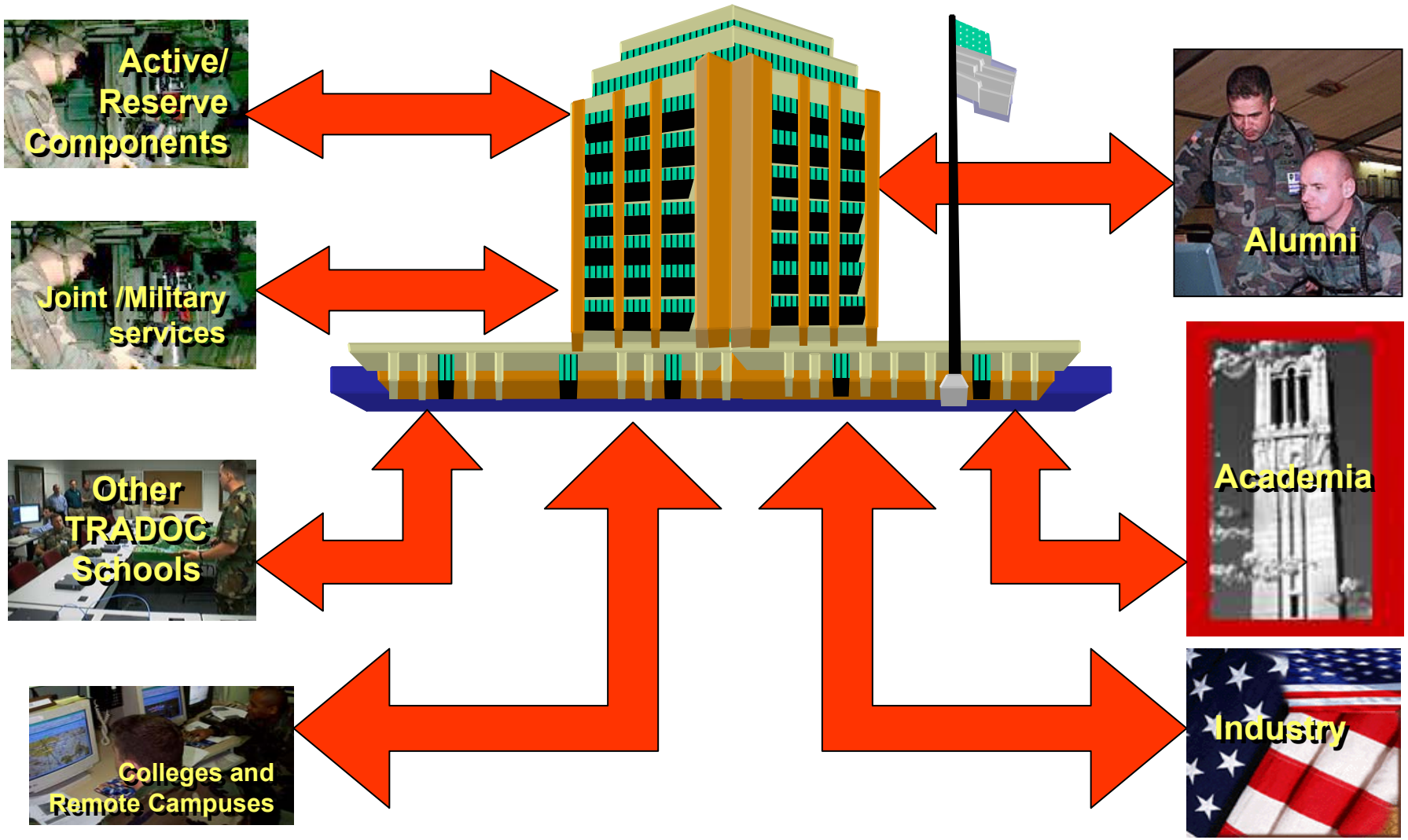
Lifelong Learning

Represents a "real change" in the way business is conducted

- University accepts and assumes same responsibility for individuals at all locations
  - Design of training materials
  - Focus of faculty and staff
  - Records
  - Funding
- Individual accepts and assumes greater responsibility for learning

Lifelong learning is not distance learning; indeed, distance learning is a subset and is a tool of lifelong learning

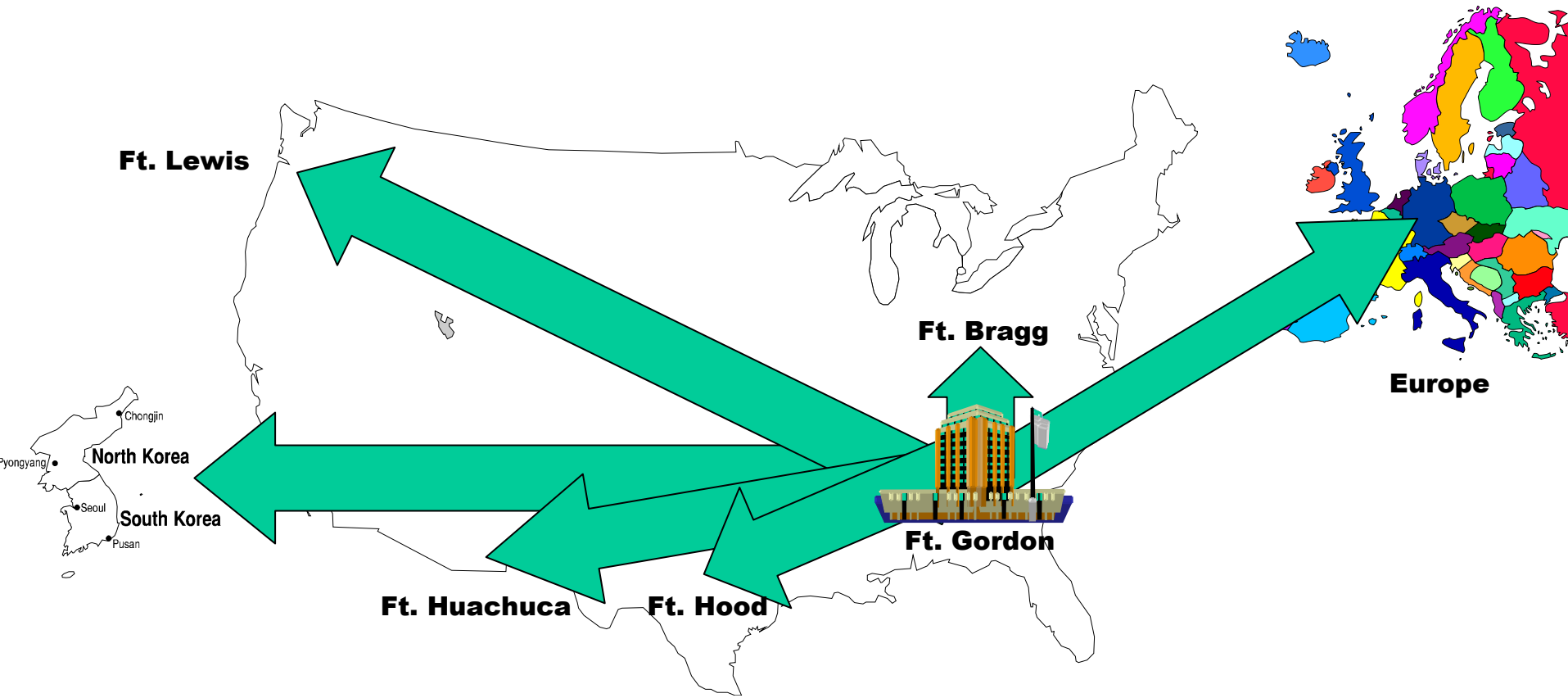
University of Information Technology



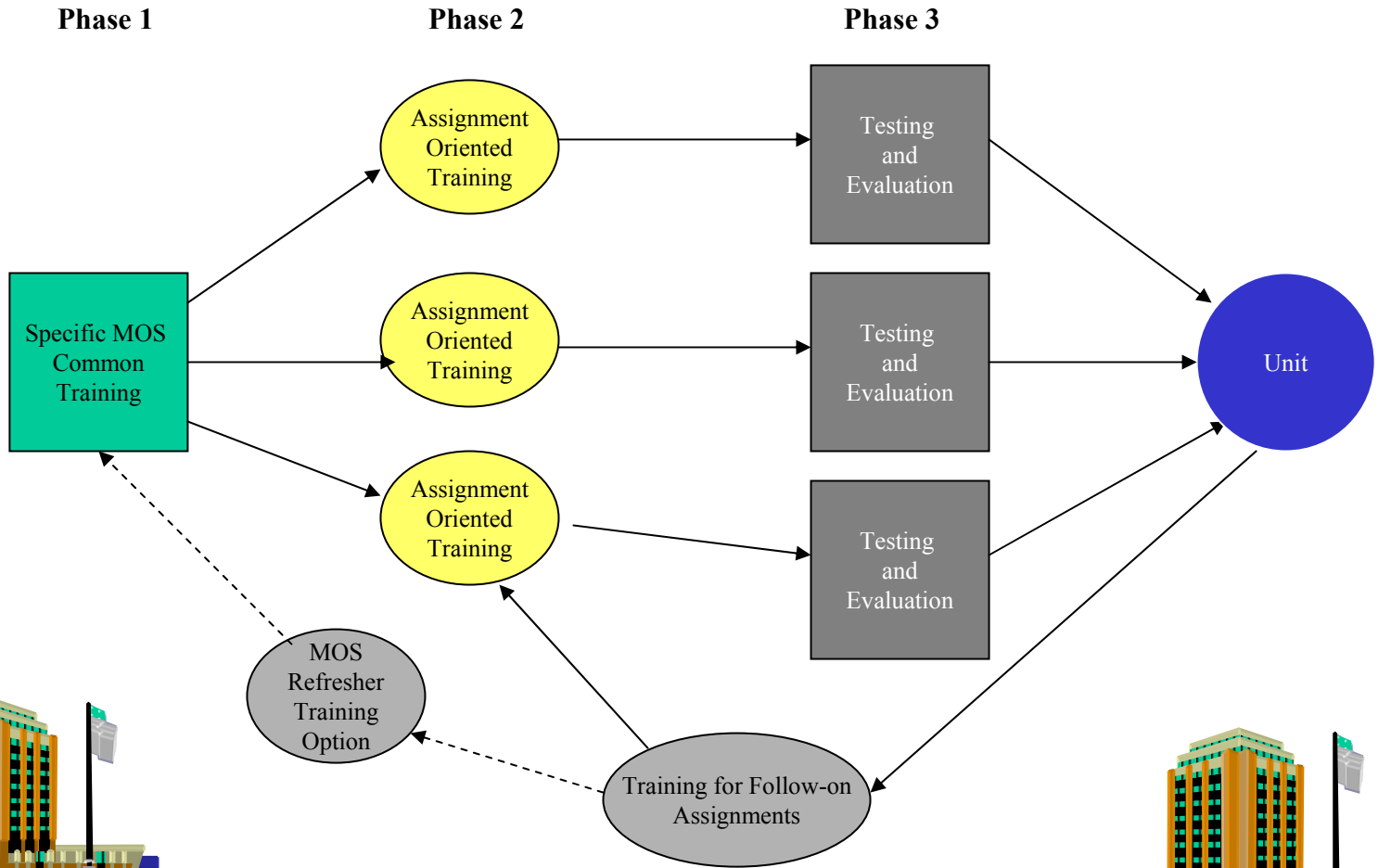
University of Information Technology

- “Home” for signal and information technology soldiers, leaders and their families
- Provides 24/7 lifelong learning and reach back
- Responsibility same for all students, regardless of location
- Has relationships with academia and industry
- Sponsors education and training research and publications
- Includes remote campuses

Examples of Candidate University Remote Campuses



University Education & Training Model



Education and Training Model/Approach

- Provides knowledge based training common to all signal and information technology soldiers and leaders

- Includes education and training of theory and principles in knowledge based training
  - Embed and reinforce theory and principles as part of MOS Specific Training at the “teachable moment”

- Includes testing and evaluation to verify soldiers and leaders arrive at the unit trained

- Provides “Tracked” assignment oriented training tailored to the next assignment, to include follow-on assignments

Education and Training Model/Approach

- Flexible
  - Does not assume one size fits all
  - Can be tailored to meet the needs of individual MOSs, soldiers and/or leaders
  - Supports increased student throughput

- Puts soldiers and leaders with knowledge of theory and principles and who have received training “tailored” to the unit assignment in the field faster

- Takes assignment oriented training burden off the units in the field – ***Partnership***

- Supports training of legacy, digital and COTS systems

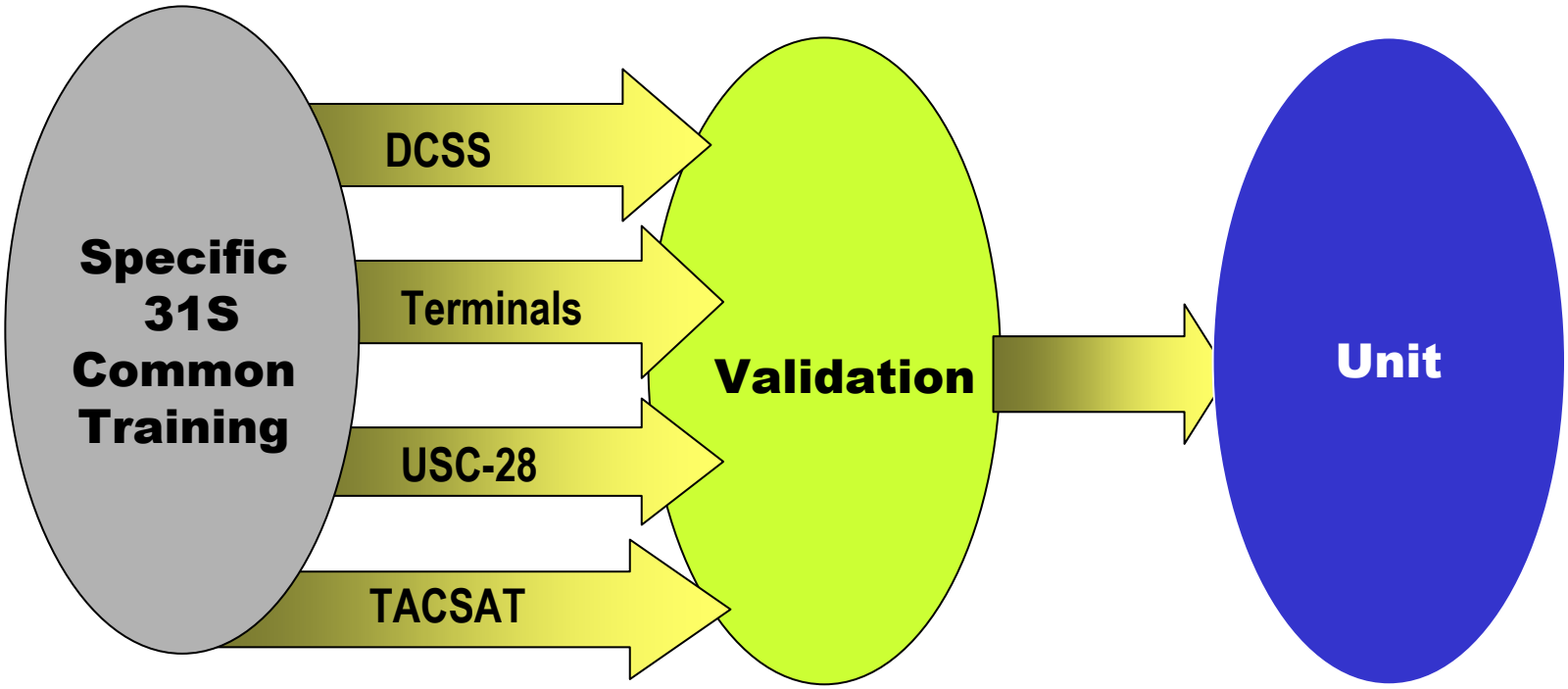
Education and Training Model

- Conduct pilot(s) of the Education and Training Model to start down the path and obtain lessons learned

- Candidate pilot(s) include:
  - Assignment oriented training (MOS 31S, 31R and/or Officer Advanced Course)
  - Increase use of interactive PC based simulations to support “learning by doing” (pick one)
  - Expanded COTS training (MOS 53)
  - Trading off equipment for simulations (Smart-T)
  - Assignment oriented training for follow-on assignments

Example of a "Tracked" Training Strategy

Student receives training on the track that corresponds to the next unit assignment



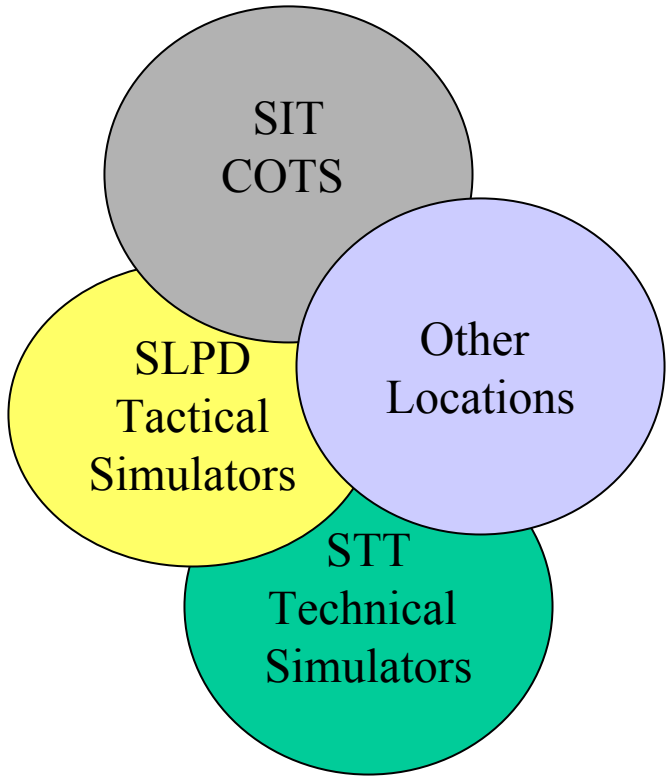
Same strategy is used for initial unit assignments and subsequent unit assignments

Simulations

- Information technology and signal tasks are well suited for the use of simulators for training
  - Most tasks can best be acquired via “learning by doing”
  - Heavily technical subjects that can be supported with PC based simulations
  - Tactics are relatively simple and do not require complex tactical simulations

- Simulators can be grouped into the general categories of technical and tactical
  - Technical simulators provide training on the operation and maintenance of systems and networks (***science***)
  - Tactical simulators provide training on the fighting of the systems and networks (***art***)

Common Use of Simulations



Other locations include remote campuses, units and individuals (active, reserve components, and civilians in the Army, other military services, joint components, and other nations) located away from Ft Gordon

Trainers and Simulations

Technical Trainers

- Echelons Below Corps Trainer
- Echelons Above Corps Trainer
- Integrated Digital System Trainer

Tactical Trainers

- Information Technology Fundamentals & Principles Tactical Trainer
- Information Technology Tactical Network Trainer
- Information Technology Tactical Adaptive Leader's Trainer
- Visual Terrain Environment Trainer
- Reconfigurable TOC Trainer

Trainers and Simulations
Key Points to Keep in Mind

- Trainers and simulations are being developed to support lifelong learning
- Being developed to support needs of the University, remote campuses, reserve components as well as signal units and individual soldiers and leaders
- Legacy systems are going to be part of the community for a long time and training has to be provided for these as well as the new systems

Technical Trainers

Technical Trainers	
Echelons Below Corps Trainer	**Echelons Above Corps Trainer**
AN/TTC-46	AN/TTC-56
AN/TTC-47	AN/TRC-138
AN/TTC-48	AN/TRC-170 (USAF only)
AN/TRC-190	AN/TRC-173
AN/TRC-191	AN/TRC-174
AN/TTC-50 (Ft. Bragg only)	AN/TRC-175
AN/TTC-51 (Ft Bragg only)	AN/TSC-85 & AN/TSC-93
AN/TTC-154 (SMART-T)	TD-1233, TD-1234, TD-1235 (Joint Training)
AN/TSC-156 (V) STAR-T (new system)	CV-4180 (Joint Training)
AN/VSQ-2C (V) 1 and AN/TSQ-158 (V) 4 (EPLRS System)	TTC-39D/PS/39D(V2) 2 Fundamentals
Integrated Digital Systems Trainer	
FBCB2	TAIS
MCS	SINCGARS/INC
CSS-CS	EPLRS Network Manager
ASAS	Network Manager Tool
AFATDS	TIMS
FAADC2 (AMDW/S)	ISYSCON
GCSS-A	RAPTOR

Echelon Below Corps Trainer

	Primary Operator & User	Secondary Operator	Supervisor	Planner & Manager	Organizational Maintainer	Director Support Maintainer	Level of Complexity
Echelon Below Corps Trainer							
AN/TTC-47	F,A,p,v		f	f	F,A,P,v	F,A,P,v	3
AN/TTC-46	F,A,p,v		f	f	F,A,P,v	F,A,P,v	3
AN/TTC-48	F,A,p,v		f	f	F,A,P,v	F,A,P,v	3
AN/TRC-190	F,A,p,v		f	f	F,A,P,v	F,A,P,v	3
AN/TRC-191	F,A,p,v		f	f	F,A,P,v	F,A,P,v	3
AN/TTC-51 (Ft. Bragg)			f	f			
AN/TTC-50 (Ft. Bragg)			f	f			
AN/TSC-154 SMART-T	F,A,p,v		F	F	F,A,P,v	F,A,P,v	3
AN/TSC-156 (V)* STAR-T	F,A,p,v		F	F	F,A,P,v	F,A,P,v	3
AN/VSQ-2C(V)1 and AN/TSQ-158 (V)4. (EPLRS System)	F,A,p,v		f	f	F,A,P,v	F,A,P,v	2

Echelon Above Corps Trainer

	A	L	M	N	O	P	Q	R
1		Primary Operator & User	Secondary Operator	Supervisor	Planner & Manager	Organizational Maintainer	Direct Support Maintainer	Level of Complexity
20	**Echelon Above Corps Trainer**							
21	AN/TRC-173	F,A,p,v		f	f	F,A,P,v	F,A,P,v	4
22	AN/TRC-174	F,A,p,v		f	f	F,A,P,v	F,A,P,v	4
23	AN/TRC-175	F,A,p,v		f	f	F,A,P,v	F,A,P,v	4
24	AN/TRC-138	F,A,p,v		f	f	F,A,P,v	F,A,P,v	4
25	AN/TRC-170 (USAF)			f	f			
26	AN/TSC-85	F,A,p,v		f	f	F,A,p,v	F,A,p,v	4
27	AN/TSC-93	F,A,p,v		f	f	F,A,p,v	F,A,p,v	4
28	AN/TTC-56	F,A,p,v		F	F	F,A,p,v	F,A,p,v	4
29	TD-1233, TD-1234, TD-1235			f	f			
30	CV-4180			f	f			
31	TTC-39D/PS/39D(V)2	F,A,p,v		f	f	F,A,p,v	F,A,p,v	4

Integrated Digital System Trainer

	Primary Operator & User	Secondary Operator	Supervisor	Planner & Manager	Organizational Maintainer	Director Support Maintainer	Level of Complexity
Integrated Digital System Trainer							
MCS		F,A,p,v	F	F			1
MCS Light		F,A,p,v	F	F			1
ASAS		F,A,p,v	F	F			1
AFATDS		F,A,p,v	F	F			1
FAADC2 (AMDWS)		F,A,p,v	F	F			1
FBCB2		F,A,p,v	F	F	F,A,p,v		2
GCSS-A		F,A,p,v	F	F			1
TAIS		F,A,p,v	F	F			1
CSSCS		F,A,p,v	F	F			1
SINCGARS		F,A,p,v	F	F	F,A,p,v		2
EPLRS Network Manager	F,A,p,v			F,A,p,v	F,A,p,v		2
Network Management Tool	F,A,p,v			F,A,p,v	F,A,p,v		2
TIMS	F,A,p,v			F,A,p,v	F,A,p,v		2
ISYSCON	F,A,p,v			F,A,p,v	F,A,p,v		2
RAPTOR	F,A,p,v			F,A,p,v			2

Tactical Trainers

Tactical Trainers			
Trainer	**Purpose**	**Complexity**	
Information Technology Fundamentals & Principles Tactical Trainer	Train leaders in signal and information technology fundamental and principles	**2**	
Information Technology Tactical Network Trainer	Train leaders to plan, establish, operate, protect and fight signal and information technology networks within the context of tactical scenarios	2	
Information Technology Tactical Adaptive Leader Trainer	Train adaptive leaders in a range of tactical scenarios and situations; a computer generated leadership reaction course	2	
Reconfigurable TOC Trainer	Train leaders on different TOC configurations with emphasis on signal and information technology systems and networks operating in a range of tactical TOC configurations	3	
Visual Terrain Environment Trainer (immersive)	CAPSTONE exercises to validate leader skills to plan, establish, operate protect, and fight signal and information technology systems and networks in support of tactical operations	2	

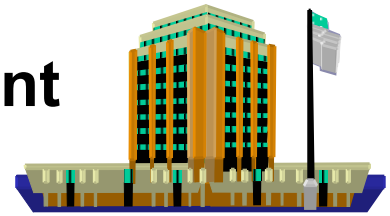
Tactical Simulations

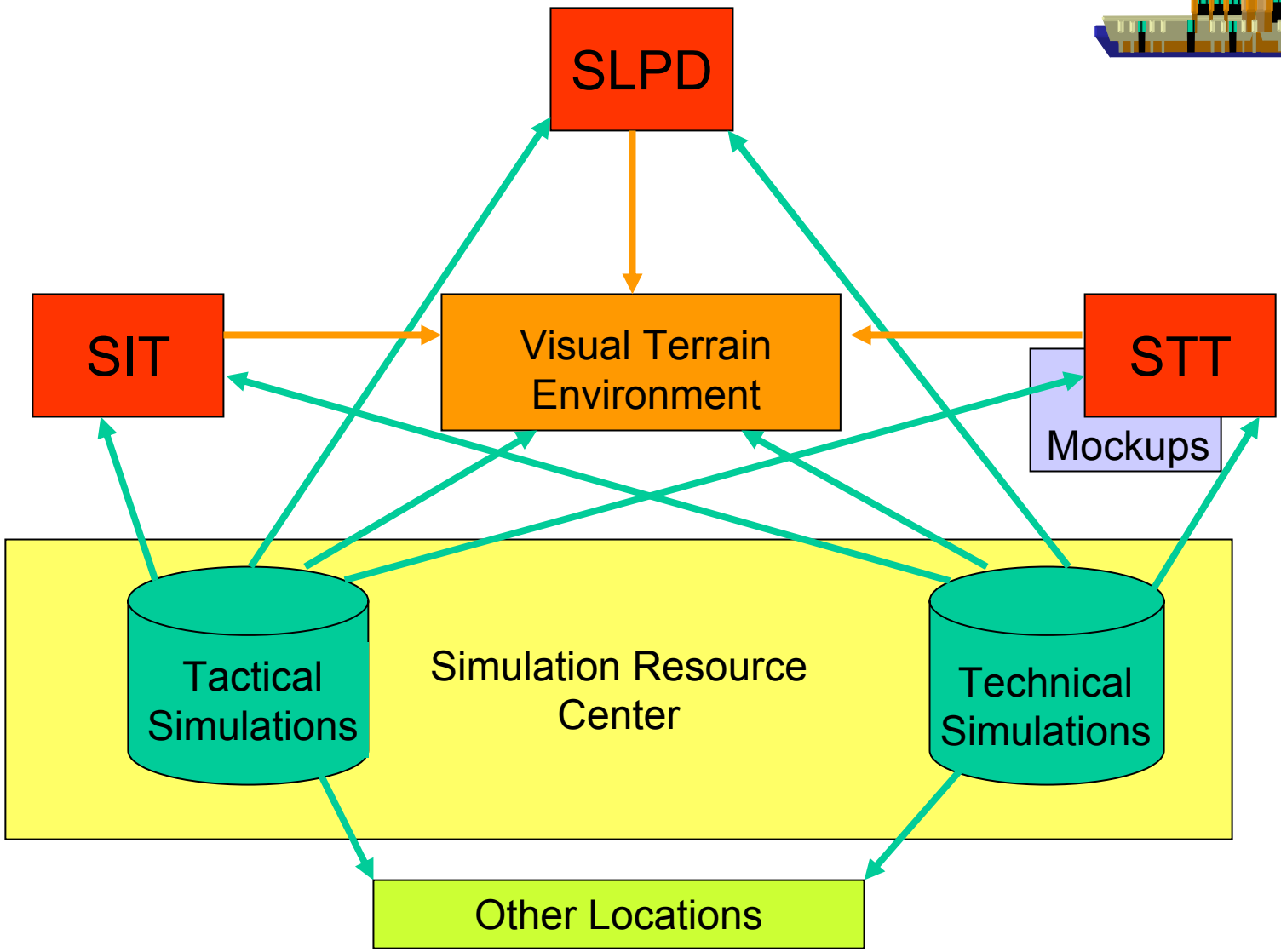
Trainer/Course	Fundamentals & Principles Tactical Trainer	Information Technology Tactical Network Trainer	Tactical Leader's Trainer	Visual Terrain Environment Trainer	Reconfigurable TOC Trainer
Network Fundamentals					
Transmission Fundamentals					
Joint/EAC Communications					
EBC Signal Operations					
Network Planning and Management Fundamentals					
ISYSCON Fundamentals					
TOC Simulation					
S-6 Fundamentals					
S-6 TOC					
SIGNAL PLATOON LEADER FUNDANMENTALS					
Tactical FTX					
Signal FTX					
SIPRNET, NIPRNET, and NES Fundamentals					
TACTICAL DEFENSE MESSAGE SYSTEM (DMS/TMS) Fundamentals					
DGM, MULTICHANNEL AND TECHNICAL CONTROL Fundamentals					
MOBILE SUBSCRIBER EQUIPMENT (MSE) Fundamentals					

Other Trainers

	Primary Operator & User	Secondary Operator	Supervisor	Planner & Manager	Organizational Maintainer	Director Support Maintainer	Level of Complexity	
Other Trainers								
Satellite and Telecommunications Principles Trainer	F,A,p,v				F,A,p,v	F,A,p,v	4	
CHS-2 Computer Assembly and Disassembly Trainer			f	f	F,A,p,v	F,A,p,v	2	

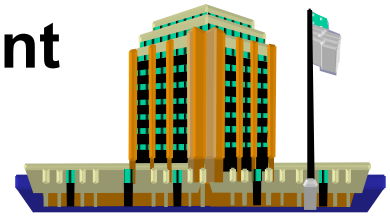
Simulation Technology Management

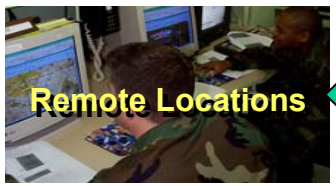




Simulation Technology Management

Distribution to Other Locations





24/7 Help Desk

Simulation Resource Center

Library
- Config Mgmt
- Database Storage
- Database Access

DTAC Interface
- Web site
- Teleconferencing

Contracting Support

- Omnibus IDIQ
- Use existing contracting vehicles
  - TRADOC Doctrine IDIQ
  - STRICOM STOC

Command and Control

- University and Education and Training Models are consistent with USASC&FG reorganization activities

- Include the reorganization plan that is approved and implemented as part of the USASC&FG Information Technology and Digital Training Masterplan

Managing the Implementation
Executive Steering Committee

- Provide oversight for the implementation
- Include members who understand vision, potential & are responsible for successful implementation
- Candidate membership
  - USASC&FG Command Group
  - University
  - Signal units
  - Reserve Components
  - Academia and industry
  - Representatives from other military services and joint organizations/agencies
- Formally meet twice a year to review plans and progress and make recommendations

Managing the Implementation
Implementation Task Forces

Implementation Task Forces		
Task Force	**Develop Implementation/Action Plan to**	**Chair**
University of Information Technology	Establish University with colleges, remote campuses, relationships and programs with other academic/research organizations, sponsored research/publication programs, 24/7 Help Desk and Simulation Resource Center	Directorate of Training
Education and Training Model	Implement model, to include conducting prototypes	Office, Chief of Signal
Technical Trainers and Simulations	Determine education and training requirements for trainers and simulation	STT
Tactical Trainers and Simulations	Determine education and training requirements for trainers and simulation	SLPD
Resources and Facilities	Provide resources, facilities, establish omnibus IDIQ contract	Resource Management

Managing the Implementation
Implementation Task Forces

Prepare Implementation/action plans

- Identify bite size action items to be accomplished
- Assign lead and supporting responsibilities
- Identify outside organizations and agencies to be involved
- Determine funding requirements; be prepared to go “outside the box”
- Specify milestones and timelines

Managing the Implementation
Simulation Implementation Task Forces

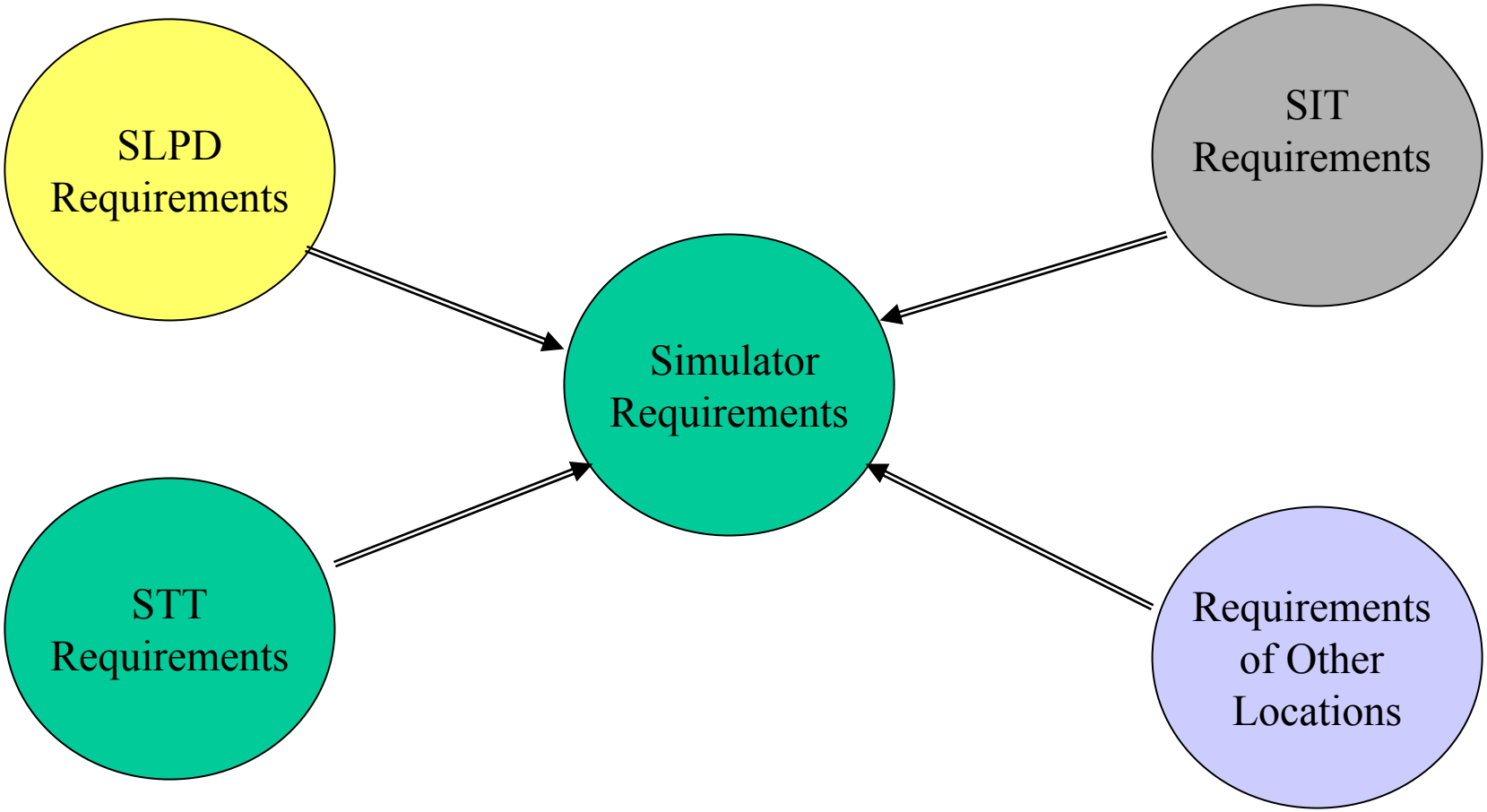
Complete work in phases

- Phase I: Develop simulation requirements
- Phase II: Prepare detail simulation training strategy
- Phase III: Provide University membership for Government IPT to develop, field, and support the simulation

Keeping in mind: Trainers and simulations are being developed to support lifelong learning for the entire community; legacy systems are going around for a long time and training has to be provided for these as well as the new systems

Implementation Task Force - Phase I

Establishing Requirements for Simulators



Implementation Task Force - Phase I

Guidelines for Establishing Simulation Requirements

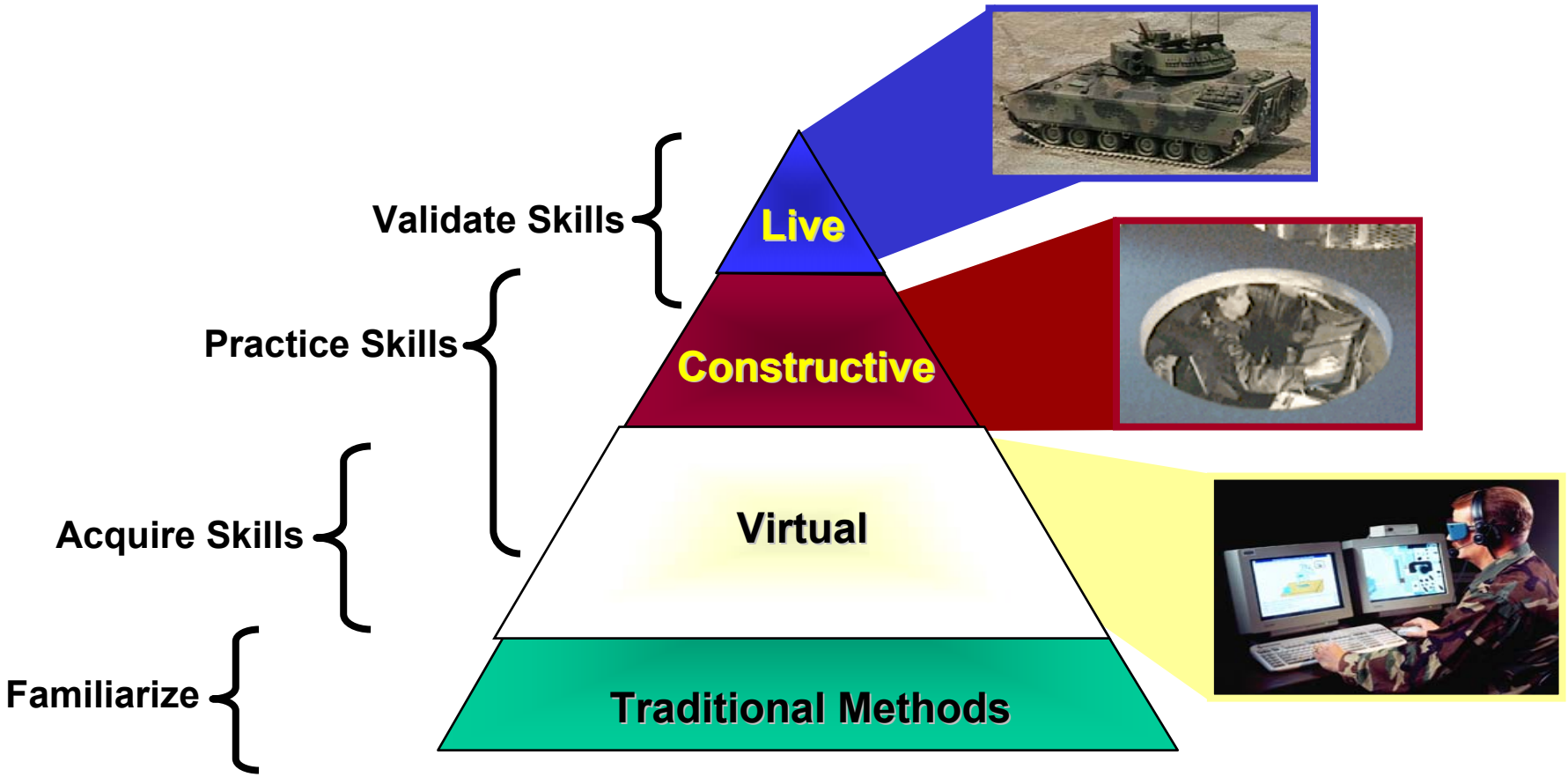
- Focus on what is required/needed; not what is possible
  - Understand/accept it is not possible to train for everything
  - Expect/accept need for priorities and trade-offs
- Avoid proprietary software; specify COTS
- Design the simulation to support:
  - Different MOSs
  - Growth
- Target PC based platform(s) available at the university and other locations
  - Multiple applications on same platforms
  - Make trade-offs when necessary

Implementation Task Force - Phase I

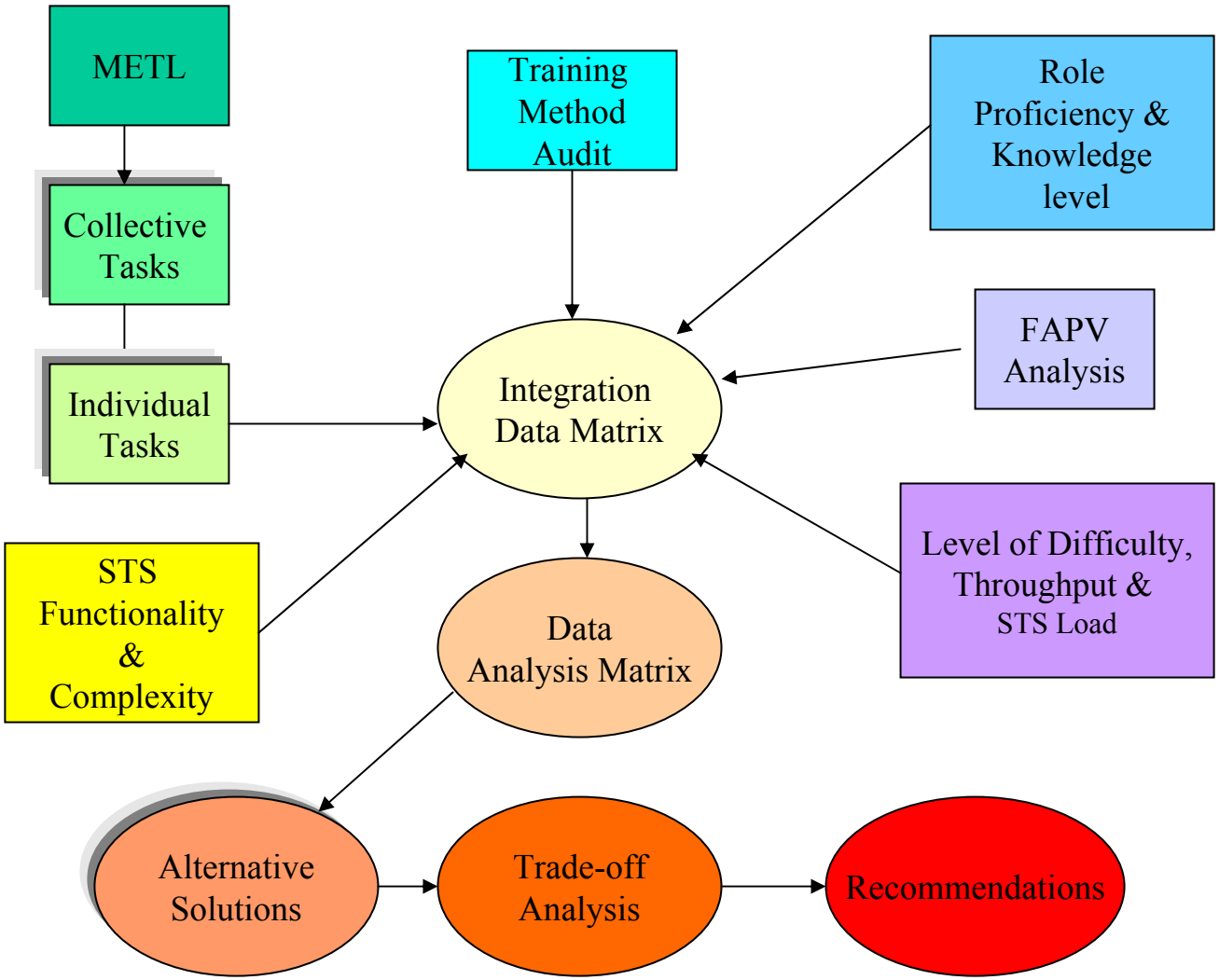
Guidelines for Establishing Simulation Requirements

- Establish and reuse a common architecture across the trainers and the associated families of simulations; e.g.,
  - Instructor Operating Station
  - Fault insertion
  - Student tracking and record/AAR
  - Screen menu
  - Man-machine interface
- Establish and enforce quantifiable requirements to be used as “exit criteria” for simulation development
  - Avoid requirement “creep”
- Establish complementary relationship between simulations, CBT/IMI, PTTs, HOTs, and actual equipment

Implementation Task Force
Training Triangle



Implementation Task Force - Phase II
Integrated Training System Model



Implementation Task Force - Phase II
Integration Data Matrix

Task: Install Satellite Communications Terminal AN/TSC-85B(V) & AN/TSC-93B(V)									
31S-10			Traditional	CBT/IMI	Tech Sim	Tac Sim	PTT	HOTS	Equipment
Level 1 Audit			2	2	0	N	N	0	3
Role		P							
Proficiency Level		2	`						
Knowledge Level		B							
FAPV Level			F	F,A	P,V			A,P	V
Level of Difficulty			2	1	0.9	0	0	1.1	1.1
Students per Year			461	461	461	0	0	461	461
STS Load			77	461	207	0	0	254	254
ROM									

Simulation Funding Strategies

- Pursue funding for technical and tactical trainers that include an associated family of simulations

- Work with PMs to have simulations developed and delivered to support training vice actual pieces of equipment
  - Target having the simulations available for training before equipment is fielded

- Trade off funds programmed for traditional training materials, devices, and/or equipment for simulations

- Leverage high priority funded Army and joint programs

- Identify and use simulations available at other locations
  - Particularly tactical simulations and databases

- Obtain buy-in and support of field units and other organizations

Summary

- Provided Level 1 Information Technology and Digital Training Masterplan
- Implementation is long term undertaking that should proceed in bite size chunks as
  - Technologies and methodologies mature and become available
  - Funding and other resources are available for its implementation
  - Culture evolves to embrace it.
- Masterplan is a flexible, living document that should be adapted over time to accommodate:
  - Changing realities and circumstances
  - Vision of future signal and information technology leaders.
- Realizing the masterplan revolutionizes education and training for the signal and information technology community
- Roadmap, with leadership support, becomes a rallying point of pride for the University and the community it serves.